



cofer  
MYD

Docket No.: S1022.80201US00  
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

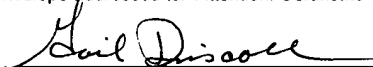
Patentee: Pierrick Descure  
Serial No.: 09/361,700 Patent No. 6,960,799  
Filed: July 27, 1999 Issued: November 1, 2005  
For: IMAGE SENSOR WITH A PHOTODIODE ARRAY

Examiner: Gene M. Munson  
Art Unit: 2811 Confirmation No. 5850

Certificate of Mailing Under 37 CFR 1.8(a)

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the U.S. Postal Service on the date shown below with sufficient postage as First Class Mail, in an envelope addressed to: Attention: Certificate of Correction Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Dated: January 17, 2006

  
Gail Driscoll

Attention: Certificate of Correction Branch  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Certificate  
JAN 24 2006  
of Correction

REQUEST FOR CERTIFICATE OF CORRECTION  
PURSUANT TO 37 CFR 1.323

Sir/Madam:

Upon reviewing the above-identified patent, Patentee noted a typographical error which should be corrected.

On the title page:

In item (73), the assignee's name is shown as STMicroelectronics A.A. The correct name of the Assignee is STMicroelectronics S.A. as it appears on the assignment filed in the Patent Office, a copy of which is enclosed herewith.

It is respectfully requested that a Certificate of Correction be granted to correct this error as shown below.

(73) Assignee: STMicroelectronics S.A., Gentilly (FR)

The error now sought to be corrected **Error! Unknown document property name.** inadvertent typographical **Error! Unknown document property name.** the correction of which does not involve new matter or require reexamination.

Our check in the amount of \$100.00 covering the fee set forth in 37 CFR 1.20(a) is enclosed.

Transmitted herewith is a proposed Certificate of Correction effecting such amendment. Patentee respectfully solicits the granting of the requested Certificate of Correction.

The Director is hereby authorized to charge any deficiency in the fees filed or credit any over payment to our Deposit Account No. 23/2825, under Docket No. S1022.80201US00. A duplicate copy of this paper is enclosed.

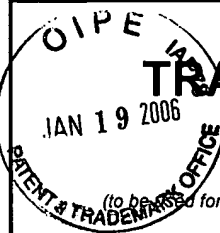
Dated: January 17, 2006

Respectfully submitted,

By 

James H. Morris  
Registration No.: 34,681  
WOLF, GREENFIELD & SACKS, P.C.  
Federal Reserve Plaza  
600 Atlantic Avenue  
Boston, Massachusetts 02210-2206  
(617) 646-8000

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

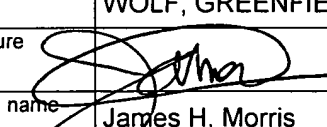
 <b>TRANSMITTAL FORM</b>	Patent Number	6,960,799
	Issue Date	November 1, 2005
	First Named Inventor	Pierrick Descure
	Art Unit	2811
	Examiner Name	Gene M. Munson
Total Number of Pages in This Submission	Attorney Docket Number	S1022.80201US00

**ENCLOSURES (Check all that apply)**

- |   |  |  |
|---|--|--|
| <input checked="" type="checkbox"/> Fee Transmittal Form<br><input checked="" type="checkbox"/> Fee Attached<br><input type="checkbox"/> Amendment/Reply<br><input type="checkbox"/> After Final<br><input type="checkbox"/> Affidavits/declaration(s)<br><input type="checkbox"/> Extension of Time Request<br><input type="checkbox"/> Express Abandonment Request<br><input checked="" type="checkbox"/> Request for Certificate of Correction<br><input type="checkbox"/> Certified Copy of Priority Document(s)<br><input type="checkbox"/> Reply to Missing Parts/Incomplete Application<br><input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53 | <input checked="" type="checkbox"/> Title Page of U.S. 6,960,799<br><input checked="" type="checkbox"/> PTO Form SB/44<br><input checked="" type="checkbox"/> Copy of Assignment Document<br><input type="checkbox"/> Petition to Convert to a Provisional Application<br><input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address<br><input type="checkbox"/> Terminal Disclaimer<br><input type="checkbox"/> Request for Refund<br><input type="checkbox"/> CD, Number of CD(s) _____<br><input type="checkbox"/> Landscape Table on CD | <input type="checkbox"/> After Allowance Communication to TC<br><input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences<br><input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)<br><input type="checkbox"/> Proprietary Information<br><input type="checkbox"/> Status Letter<br><input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):<br>Return Receipt Postcard |
|---|--|--|

Remarks

**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT**

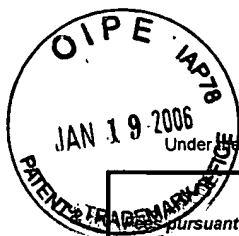
Firm Name	WOLF, GREENFIELD & SACKS, P.C.		
Signature			
Printed name	James H. Morris		
Date	January 17, 2006	Reg. No.	34,681

**Certificate of Mailing Under 37 CFR 1.8(a)**

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the U.S. Postal Service on the date shown below with sufficient postage as First Class Mail, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Dated: January 17, 2006

Signature:  (Gail Driscoll)



PTO/SB/17 (12-04v2)

Approved for use through 7/31/2006. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no person are required to respond to a collection of information unless it displays a valid OMB control number.

<b>FEE TRANSMITTAL</b> <b>For FY 2005</b>		<b>Complete if Known</b>	
		Application Number	Patent#: 6960799
		Issue Date	November 1, 2005
		First Named Inventor	6,960,799
		Examiner Name	Gene M. Munson
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27		Art Unit	2811
<b>TOTAL AMOUNT OF PAYMENT</b>		<b>(\$)</b>	<b>100.00</b>
		Attorney Docket No.	S1022.80201US00

<b>METHOD OF PAYMENT</b> (check all that apply)	
<input checked="" type="checkbox"/> Check	<input type="checkbox"/> Credit Card
<input type="checkbox"/> Money Order	<input type="checkbox"/> None
<input type="checkbox"/> Other (please identify): _____	
<input type="checkbox"/> Deposit Account	Deposit Account Number: <u>23/2825</u> Deposit Account Name: <u>Wolf, Greenfield &amp; Sacks, P.C.</u>
For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)	
<input type="checkbox"/> Charge fee(s) indicated below	<input type="checkbox"/> Charge fee(s) indicated below, except for the filing fee
<input type="checkbox"/> Charge any additional fee(s) or underpayment of fee(s) under 37 CFR 1.16 and 1.17	<input checked="" type="checkbox"/> Credit any overpayments

<b>FEE CALCULATION</b>							
<b>1. BASIC FILING, SEARCH, AND EXAMINATION FEES</b>							
	<b>FILING FEES</b>		<b>SEARCH FEES</b>		<b>EXAMINATION FEES</b>		
		<b>Small Entity</b>		<b>Small Entity</b>		<b>Small Entity</b>	
<b>Application Type</b>	<b>Fee (\$)</b>	<b>Fee (\$)</b>	<b>Fee (\$)</b>	<b>Fee (\$)</b>	<b>Fee (\$)</b>	<b>Fee (\$)</b>	<b>Fees Paid (\$)</b>
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	
<b>2. EXCESS CLAIM FEES</b>							
						<b>Fee (\$)</b>	<b>Small Entity Fee (\$)</b>
<b>Fee Description</b>							
Each claim over 20 (including Reissues)						50	25
Each independent claim over 3 (including Reissues)						200	100
Multiple dependent claims						360	180
<b>Total Claims</b>		<b>Extra Claims</b>	<b>Fee (\$)</b>	<b>Fee Paid (\$)</b>	<b>Multiple Dependent Claims</b>		
_____ - 20 = _____		x _____	= _____		<b>Fee (\$)</b>	<b>Fee Paid (\$)</b>	
<b>Indep. Claims</b>		<b>Extra Claims</b>	<b>Fee (\$)</b>	<b>Fee Paid (\$)</b>			
_____ - 3 = _____		x _____	= _____				
<b>3. APPLICATION SIZE FEE</b>							
If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).							
<b>Total Sheets</b>	<b>Extra Sheets</b>	<b>Number of each additional 50 or fraction thereof</b>			<b>Fee (\$)</b>	<b>Fee Paid (\$)</b>	
_____ - 100 = _____	/50	_____ (round up to a whole number) x _____			= _____		
<b>4. OTHER FEE(S)</b>							
Non-English Specification, \$130 fee (no small entity discount)						<b>Fees Paid (\$)</b>	
Other (e.g., late filing surcharge): <u>1811 Certificate of correction</u>						<u>100.00</u>	

<b>SUBMITTED BY</b>			
Signature		Registration No. (Attorney/Agent)	34,681
Name (Print/Type)	James H. Morris	Telephone	(617) 646-8227
		Date	January 17, 2006

<b>Certificate of Mailing Under 37 CFR 1.8(a)</b>	
I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the U.S. Postal Service on the date shown below with sufficient postage as First Class Mail, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.	
Dated: January 17, 2006	Signature:  (Gail Driscoll)



US006960799B2

(12) **United States Patent**  
**Descure**

(10) **Patent No.: US 6,960,799 B2**  
(45) **Date of Patent: Nov. 1, 2005**

(54) **IMAGE SENSOR WITH A PHOTODIODE ARRAY**

(75) **Inventor: Pierrick Descure, Saint Ismier (FR)**

(73) **Assignee: STMicroelectronics A.A., Gentilly (FR)**

(\*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 375 days.

(21) **Appl. No.: 09/361,700**

(22) **Filed: Jul. 27, 1999**

(65) **Prior Publication Data**

US 2001/0045580 A1 Nov. 29, 2001

(30) **Foreign Application Priority Data**

Jul. 28, 1998 (FR) ..... 98 09801

(51) **Int. Cl.<sup>7</sup> ..... H01L 27/146**

(52) **U.S. Cl. .... 257/292; 257/432; 257/440**

(58) **Field of Search ..... 257/292, 432, 257/440**

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

4,242,694 A 12/1980 Koike et al. .... 357/30  
4,407,010 A \* 9/1983 Baji et al. .... 257/292  
4,630,091 A 12/1986 Kuroda et al.  
4,996,578 A \* 2/1991 Motojima et al. .... 257/432  
5,084,747 A \* 1/1992 Miyawaki ..... 257/432  
5,191,399 A 3/1993 Maegawa et al.  
5,237,185 A 8/1993 Udagawa et al. .... 257/204  
5,268,309 A 12/1993 Mizutani et al.  
5,306,931 A 4/1994 Stevens  
5,330,933 A 7/1994 Chan et al.  
5,345,266 A 9/1994 Denyer  
5,502,488 A 3/1996 Nagasaki et al. .... 348/300  
5,538,207 A 7/1996 Bordogna et al.  
5,580,701 A 12/1996 Lur et al.

5,591,997 A 1/1997 Guidash et al.  
5,614,744 A \* 3/1997 Merrill ..... 257/292  
5,621,230 A 4/1997 Guidash et al.  
5,747,835 A 5/1998 Pezzani  
5,831,326 A 11/1998 Chan et al.  
5,859,462 A 1/1999 Tredwell et al.

(Continued)

**FOREIGN PATENT DOCUMENTS**

EP A-0 152 353 8/1985 ..... H01L/31/02  
EP A-0 223 136 5/1987 ..... G02B/5/28  
EP 1 207 686 A1 5/2002  
GB 2 276 512 A 9/1994  
WO WO 92/15036 A1 9/1992

(Continued)

**OTHER PUBLICATIONS**

French Search Report from French Patent Application 98 09801, filed Jul. 28, 1998.

Patent Abstracts of Japan, vol. 009, No. 262 (P-398), Oct. 19, 1985 & JP-A-60 111225 (Matsushita Denki Sangyo KK).

(Continued)

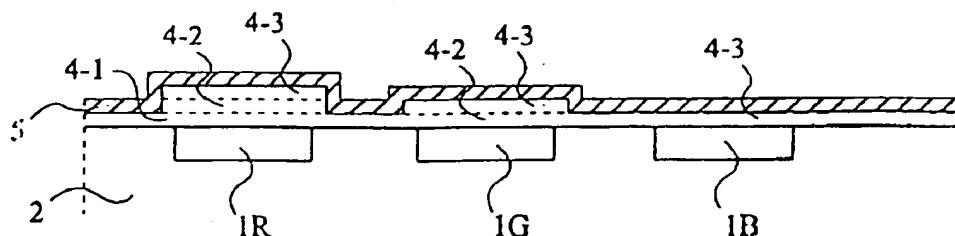
*Primary Examiner*—Gene M. Munson

(74) *Attorney, Agent, or Firm*—Lisa K. Jorgenson; James H. Morris; Wolf, Greenfield & Sacks, P.C.

(57) **ABSTRACT**

An array of photodiodes includes regions of a second conductivity type formed in a semiconductive region of a first conductivity type, divided into three interleaved sub-arrays. All the photodiodes of a same sub-array are coated with a same interference filter including at least one insulating layer of determined thickness coated with at least one conductive layer. According to the present invention, the conductive layers are electrically connected to the semiconductive region of a first conductivity type.

**16 Claims, 2 Drawing Sheets**





2EA  
UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office  
ASSISTANT SECRETARY AND COMMISSIONER  
OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

NOVEMBER 05,

PTAS

WOLF, GREENFIELD & SACKS, P.C.  
JAMES H. MORRIS  
FEDERAL RESERVE PLAZA  
600 ATLANTIC AVENUE  
BOSTON, MA 02210



\*101137879A\*

UNITED STATES PATENT AND TRADEMARK OFFICE  
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 09/03/1999

REEL/FRAME: 010211/0012  
NUMBER OF PAGES: 2

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:

DESCURE, PERRICK

DOC DATE: 08/23/1999

ASSIGNEE:

STMICROELECTRONICS S.A.  
7, AVENUE GALLIENI  
94250 GENTILLY, FRANCE

SERIAL NUMBER: 09361700  
PATENT NUMBER:

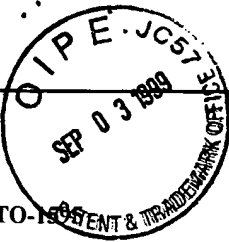
FILING DATE: 07/27/1999  
ISSUE DATE:

3/1022/8201

File Folder	<input checked="" type="checkbox"/>	Initials
ECS	<input checked="" type="checkbox"/>	
Booklet Entry	<input checked="" type="checkbox"/>	
Booklet Cross Off	<input checked="" type="checkbox"/>	
Order Copies	<input checked="" type="checkbox"/>	
Annulment	<input type="checkbox"/>	
Confirmation	<input type="checkbox"/>	

11-2488

TARA WASHINGTON, EXAMINER  
ASSIGNMENT DIVISION  
OFFICE OF PUBLIC RECORDS



RECOR

09-08-1999

EET

FORM PTO-1506 (Rev. 6-93)  
OMB No. 0651-0011 (exp. 4/94)



101137879

DEPARTMENT OF COMMERCE  
Trademark Office

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

## 1. Name of conveying party(ies):

Perrick Descure

Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

## 3. Nature of conveyance:

9-3-99

☒ Assignment☐ Merger☐ Security Agreement☐ Change of Name☐ Other \_\_\_\_\_

Execution Date: August 23, 1999

## 2. Name and address of receiving party(ies)

Name: STMicroelectronics S.A.

Internal Address:

Street Address: 7, Avenue Gallieni  
94250 Gentilly, France

Additional name(s) & addresses(es) attached? ☐ Yes ☒ No

## 4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is

A. Patent Application No.(s)

09/361,700

B. Patent No.(s)

Additional numbers attached? ☐ Yes ☒ No5. Name and address of party to whom correspondence  
Concerning document should be mailed:

Name: James H. Morris

Address: WOLF, GREENFIELD & SACKS, P.C.  
Federal Reserve Plaza  
600 Atlantic Avenue  
Boston, MA 02210

6. Total number of applications and patents involved: **[1]**

7. Total fee (37 CFR 3.41).....\$ 40.00

☒ Enclosed☐ Authorized to be charged to deposit account

The Commissioner is authorized to charge:

8. Deposit Account No: 23/2825

09/07/1999 HHOSSANI 00000003 09361700

03 FC:581

40.00 DP

DO NOT USE THIS SPACE

40E

## 9. Statement and signature

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

James H. Morris

Name of Person Signing

Signature

September 1, 1999

Date

Total number of pages including cover sheet, attachments, and document: **[2]**

Mail documents to be recorded with required cover sheet information to:  
Commissioner of Patents and Trademarks, Box Assignments  
Washington, D.C. 20231

ASSIGNMENT

In consideration of the premises and other good and valuable consideration in hand paid, the receipt and sufficiency of which is hereby acknowledged, the undersigned,

(1) <u>Pierrick DESCURE</u>	(4) _____
(2) _____	(5) _____
(3) _____	(6) _____

who have made a certain new and useful invention, hereby sell, assign and transfer unto

STMicroelectronics SA  
7, Avenue Gallieni  
94250 GENTILLY, FRANCE

its successors and assign (hereinafter designated "ASSIGNEE") the entire right, title and interest for the United States of America as defined in 35 U.S.C. 100 in the invention entitled

IMAGE SENSOR WITH A PHOTODIODE ARRAY

(a) for which an application for United States Letters Patent was filed on JULY 21, 1999, and identified by United States Serial N° 09/361,700; or

(b) for which an application for United States Letters Patent was executed on \_\_\_\_\_,

and the undersigned hereby authorize and request the United States Commissioner of Patents and Trademarks to issue any and all United States Letters Patent which may be granted therefor and any and all extensions, divisions, reissues, substitutes, renewals or continuations thereof, and the right to all benefits under the International Convention for the Protection of Industrial Property to the said ASSIGNEE, for its interest as ASSIGNEE, its successors, assigns and legal representatives; the undersigned agree that the attorneys of record in said application shall hereafter act on behalf of said ASSIGNEE;

AND the undersigned hereby agree to transfer a like interest, and to render all necessary assistance in making application for and obtaining original, divisional, reissued or extended Letters Patent of the United States, upon request of the said ASSIGNEE, its successors, assigns and legal representatives, and without further remuneration, in and to any improvements, and applications for patent based thereon, growing out of or related to the said invention; and to execute any papers by the said ASSIGNEE, its successors, assigns and legal representatives, deemed essential to ASSIGNEE's full protection and title in and to the invention hereby transferred.

SIGNED on the dates indicated aside our signatures:

<u>INVENTORS</u>	<u>DATE SIGNED</u>
1) <u>Pierrick DESCURE</u> Name: _____	<u>17 August 1999</u> <u>Pierrick DESCURE</u>
2) _____ Name: _____	_____
3) _____ Name: _____	_____
4) _____ Name: _____	_____
5) _____ Name: _____	_____



(Also Form PTO-1050)

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,960,799  
DATED : November 1, 2005  
INVENTOR(S) : Pierrick Descure

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Item (73) should read:

(73) Assignee: STMicroelectronics S.A., Gentilly (FR)

MAILING ADDRESS OF SENDER

PATENT NO. 6,960,799

James H. Morris  
Wolf, Greenfield & Sacks, P.C.  
600 Atlantic Avenue  
Boston, Massachusetts 02210